USMC

SHOOTING TEAM

INTRODUCTIO
N TO THE RCO

OVERVIEW

- Design of the RCO
- Nomenclature
- RCO safety, warning and cautions
- Care and maintenance of the RCO
- Mounting procedures
- Aiming
- Zeroing

DESIGN OF THE RCO

- Description
  - The Rifle Combat Optic (RCO) is an Advanced Combat Optical Gun sight (ACOG) designed for the M16A4 and M4.
  - Relatively quick target acquisition at close range.
  - Enhanced target ID and hit probability out to 800M.

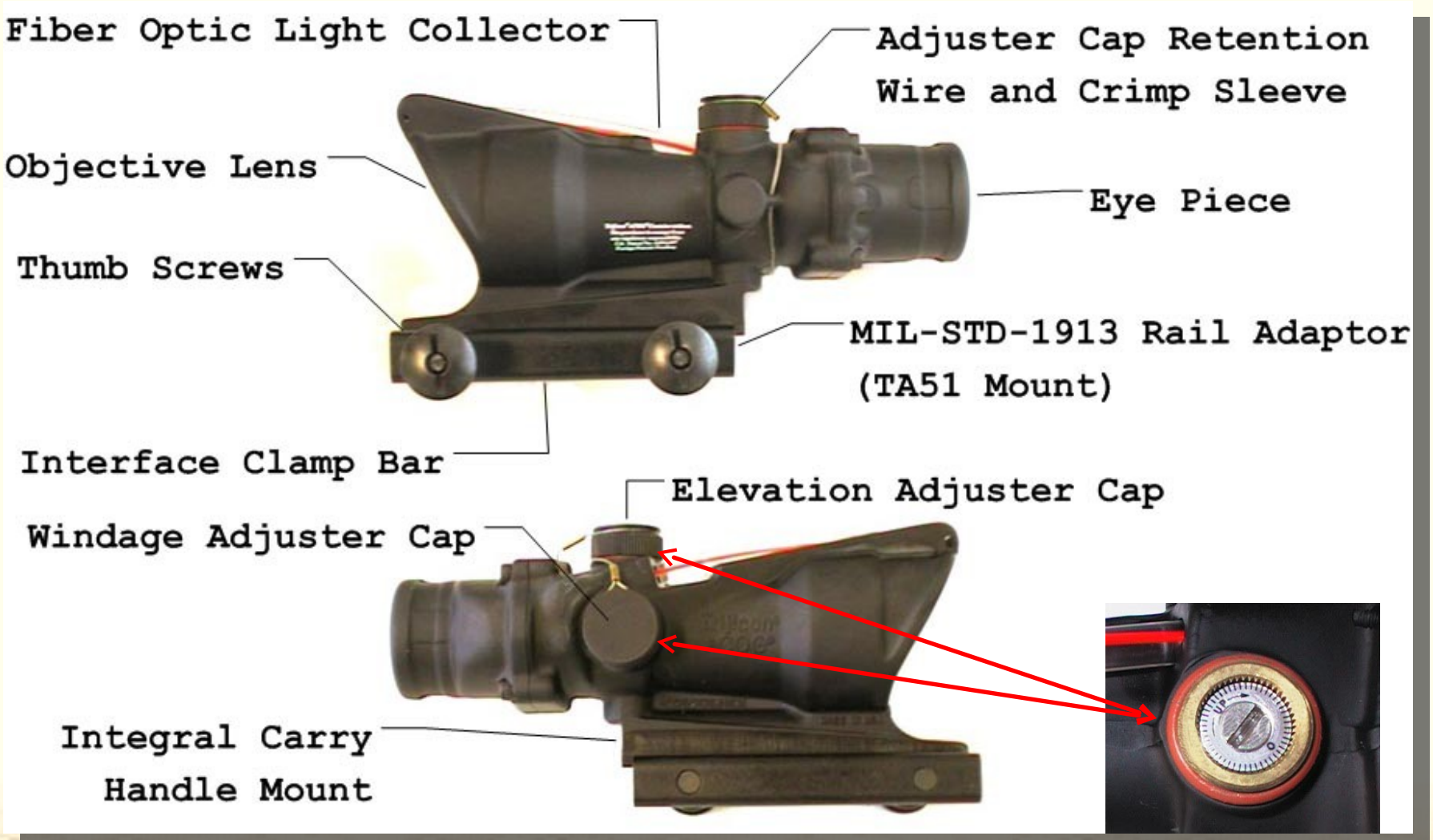
DESIGN OF THE RCO (cont.)

- 2 variants with 2 bullet drop compensators (BDC).
  - AN/PVQ31A : Bullet drop compensator matched to trajectory of 5.56mm from 20” barrel of the M16A4.
  - AN/PVQ31B : Bullet drop compensator matched to the trajectory of 5.56mm from 14.5” barrel of M4.

DESIGN OF THE RCO (cont.)

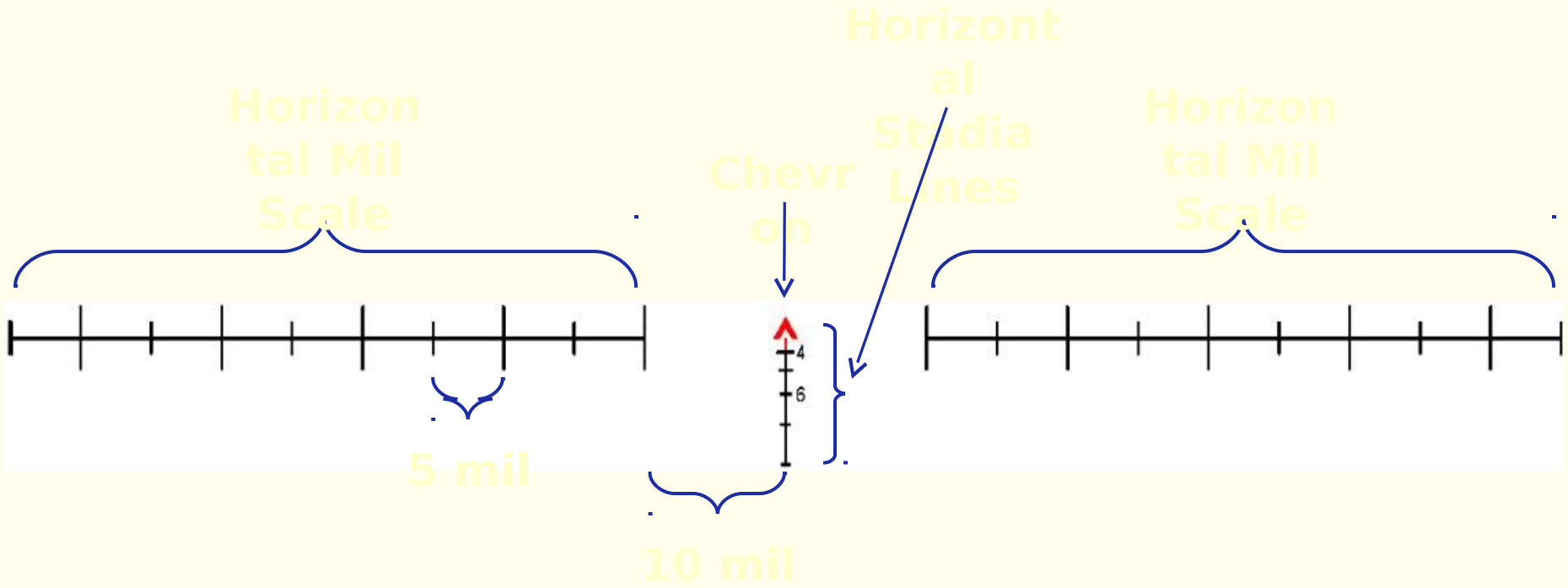
- Dual-illumination
  - Fiber optic light collector
  - Self luminous tritium gas
  - Engagement with both eyes open
    - Bindon aiming concept

NOMENCLATURE



NOMENCLATURE (cont.)

RETICLE PATTERN



RCO SAFETY WARNING AND CAUTIONS

- Before mounting place weapon in Condition 4.
- Do not over-tighten or force any screws. Hand tighten then ¼ turn ideally with flat head screwdriver.
- Do not over adjust windage and elevation adjusters.
- Waterproof only with O-rings installed.
- Clean with water only.
- Never attempt to disassemble the scope.

RCO CARE AND MAINTENANCE

- Use clean soapy water to rinse foreign material from the external surfaces only.
  - Dry with dry, clean, soft cloth.
  - When cleaning lenses ensure no dirt is on cloth
  - Ensure Adjuster Caps are in place
  - Do not use any type of solvent or harsh chemicals
  - Use

RCO SERVICEABILITY CHECK

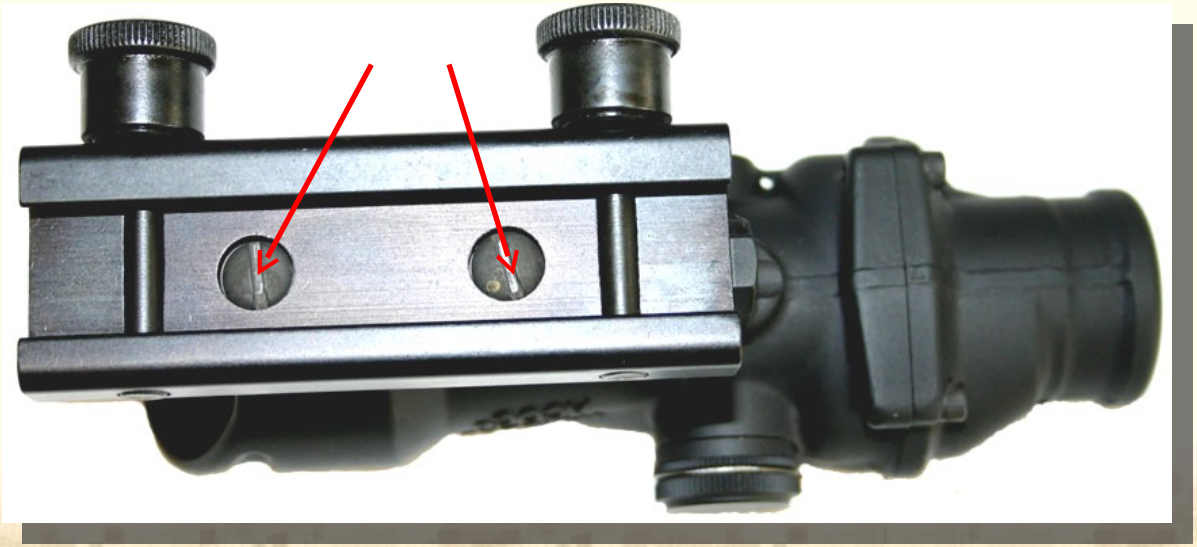
- Conduct a visual inspection for damage of:
  - Housing and exterior of lenses for cracks.
  - Light collector tube for signs of damage. Bubbles or milky lines in tube are normal
- Ensure Adjuster Caps are fully seated.
- Ensure TA51 mount has all parts.
- Inspect ARD for visible damage.

RCO SERVICEABILITY CHECK (cont.)

- Inspection Technique #1: Enter a dark room and allow 10 minutes for eyes to adapt. Observe illuminated chevron.
- Inspection Technique #2: Completely cover objective lens and fiber optic tube. Place eye close to eyepiece to observe illuminated chevron.
- If chevron is not illuminated, turn in RCO.

RCO MOUNTING PROCEDURES

- If the TA51 mount has been loosened or removed, ensure Loctite is used to when re-attaching it.
- Ensure TA51 Rail Mounting Screws are resecured w/Loctite if removed.

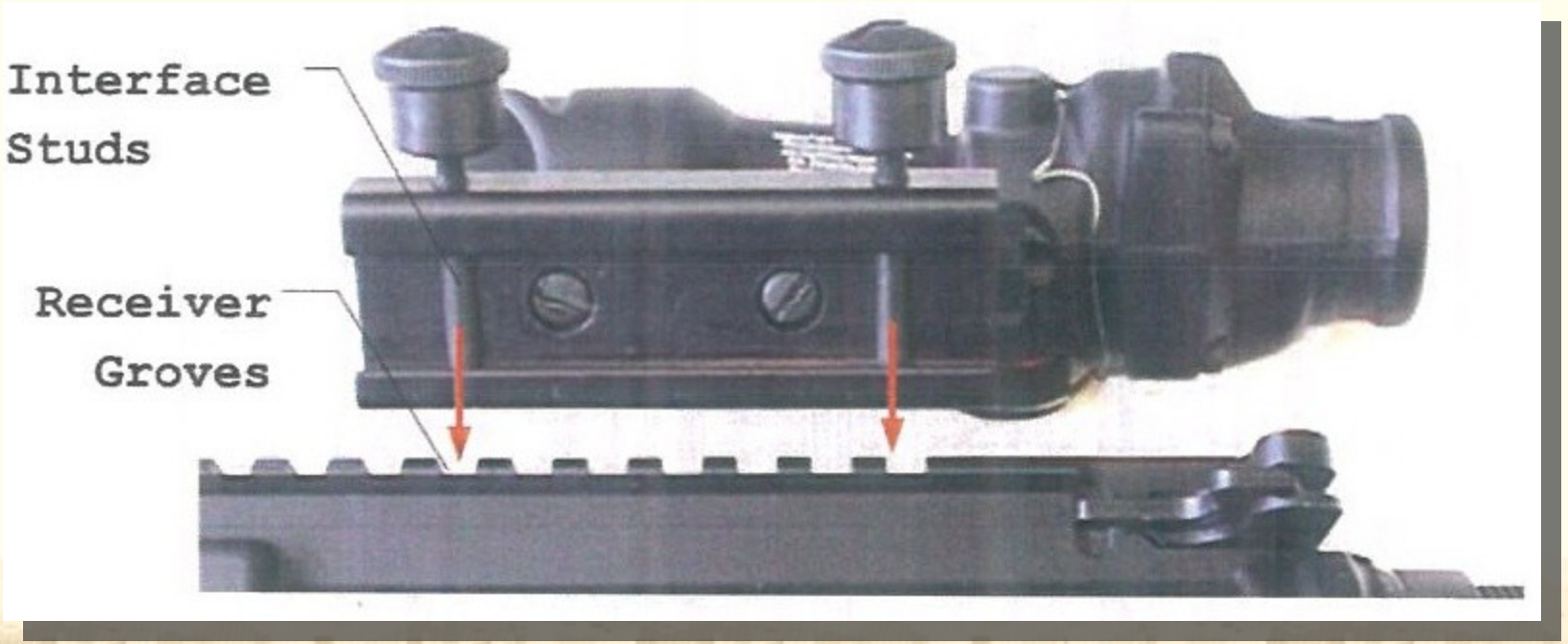


RCO MOUNTING PROCEDURES (cont.)

- Prior to attempting to mount the optic, loosen the thumb screws and pull the interface clamp bar back against the knobs.

RCO MOUNTING PROCEDURES (cont.)

- Align the interface stubs located on the bottom of the adapter with the grooves on the rail of the flattop receiver.



RCO MOUNTING PROCEDURES (cont.)

With the RCO on the rail and assisted by another Marine:

- Move the RCO forward and back until proper eye relief is achieved, ideally in the sitting position.
- 1.5” eye relief
- Finish mounting procedures.

•ADD PICTURE

RCO MOUNTING PROCEDURES (cont.)

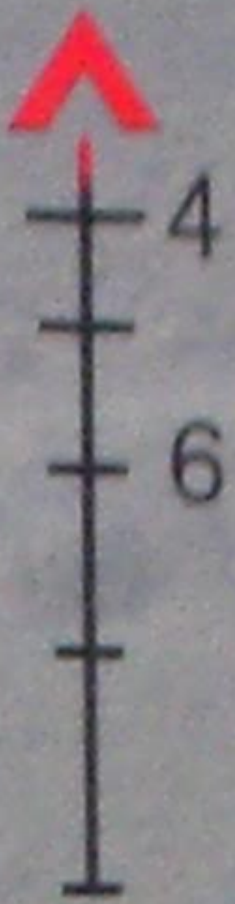
- Apply forward pressure on the optic and tighten the knobs using finger pressure only.
- Add another ¼ turn utilizing a coin or bladed screwdriver.

DO NOT TIGHTEN PAST THIS RECOMENDED METHOD.

RCO MOUNTING PROCEDURES (cont.)

- Mark the thumb screw location with permanent marker or paint pen.
- Installing RCO in same rail position and same torque on thumb screws will ensure maximum zero retention.

AIMING HOLDS



SIGHTING SYSTEM ADJUSTMENTS

- Rifle Combat Optic
  - 9 clicks at 36 yards = 1 inch
  - 3 clicks at 100 meters = 1 inch
  - 1 click at 300 meters = 1 inch

ZEROING THE SERVICE RIFLE

Steps to zeroing the rifle:

- Fire 3 round shot group.
- Mark the target.
- Plot the group.
- Triangulate the shot group.
- Make adjustment.
- Tap RCO firmly.
- Repeat.

FACTORS FOR RECONFIRMING A ZERO

- Maintenance
- Temperature
- Climate
- Elevation
- Uniform

QUESTIONS ?

SUMMARY

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